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The Missouri Miner, May 18, 1917

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THE MISSOURI MINER.

Missouri School of Mines and Metallurgy, Rolla, Mo.

Vol. 3, No. 36.

Friday, May 18, 1917.

Price 5 Cents.

COMMENCEMENT BALL THURSDAY EVENING, MAY 24, 1917.

The annual commencement ball of the Missouri School of Mines will be held in Jackling Gymnasium Thursday evening, May 24, 1917. The dance will be held under the auspices of the 1917 Rollamo Board, assuring an excellent affair.

The Seniors will all be there, but the students of the School of Mines should attend this last social affair of the school year. Friends of the college are all cordially invited to attend.

The music will be furnished by Falkenhainer's orchestra of St. Louis, Mo.

The dance is to be informal, \$1.50 a couple. Tickets can be purchased at Lockner's Jewelry Store, of any Rollamo member, or at the box office Thursday night.

Resolution.

Let it be known that the students of the Missouri School of Mines, in mass meeting assembled, have

Resolved, that we extend our best wishes to the members of the faculty and to the sixty of our fellow students who have joined the U. S. Military Training Camp and the U. S. Engineers Regiments, and that we expect them to fully maintain the reputation of M. S. M.

H. A. Neustaedter, '16, of Desloge, Mo., and S. W. Lesniak, '17, of Toole, Utah, have each sent in two dollars for the flag pole fund.

P. B. Shotwell, ex-'17, is in the U. S. Training Camp at Presidio, San Francisco, Calif.

ANSWERED COUNTRY'S CALL.

Below we publish a list of the School of Mines Faculty, and the Students, who have responded to the country's call. M. S. M. students will be found at several training camps, and in various departments of the army:

Engineer Officers' Reserve Corps.

Assistant Professor E. S. McCandliss, Captain.

Professor C. R. Forbes, Captain.

Associate Professor F. E. Dennie, 1st Lieutenant.

Instructor F. H. Frame, 2nd Lieutenant.

These officers are in the training camp at Fort Riley, Kansas.

United States Military Training Camp
Fort Riley, Kansas.

H. A. Ambler, '17; E. L. Arnold, '17; G. B. Bloom, '20; R. Bruce, '19; J. C. Burgeson, '19; G. Burnet, '18; H. S. Clark, '18; R. D. Cooper, '18; H. G. Corby, '18; T. C. Crawford, '17; W. B. Crutcher, '20; L. H. Cunningham, '18; T. L. Dawson, '18; C. L. Dorris, '19; F. E. Eames, '17; H. K. Ewing, '19; J. E. Flanders, '18; P. G. Forman, '19; G. H. Fox, '20; C. A. Gettler, '20; J. P. Gill, '18; L. H. Goldman, '18; T. F. Golic, '18; K. W. Heimberger, '18; H. P. Lawrence, Special; T. W. Leach, '19; M. C. Lucky, '17; R. Marston, '19; F. V. Moore, '19; C. E. Muehlberg, '17; E. N. Murphy, '18; J. R. Nevin, '17; P. F. Pape, '17; C. A. Peterson, '17; W. G. Pryor, '19; J. W. Pugh, '18; J. C. Raible, Jr., '18; J. H. G. Reilly, '17; C. C. Rice, '19; W. W. Richmond, '20; R. R. Riddlesperger, '20; B. L. Rinehart, Special; H. D. Scruby, '19; F. P. Shays, '17; J. J. Shipley, '17; H. F. Shore, '19; R. O. Shriver, '17; S. N. Sprigg, '20; O. E. Stoner, '18; M. L. Terry, '18; L. M. Tidd, '20; J. K. Walsh, '17; T. P. F. Walsh, '17; P. D. Wilkinson, '18; C. C. Wilson, '19; F. P. White, '20; K. M. Wright, '20; M. F. Bowles, '17; R. P. Lyons, '17; L. R. Scheurer, '18.

United States Military Training Camp
Ft. Sheridan, Ill.

W. G. Hippard, '18; F. A. Pope, '20.

United States Military Training Camp
Leon Springs, Texas.

P. H. Bohart, '19.

Regiment for Engineers for France.

W. Crow, '19, St. Louis, Mo.; A. D.

Potts, '19, Pittsburgh, Pa.

United States Navy.

D. C. Beyer, Long Island, N. Y.

United States Aviation Corps, Ft. Sam Houston, Texas.

M. P. Brazill, '19.

United States Telephone and Signal Service, Kansas City, Mo.

C. A. Etem, 'Special.

Canadian Artillery, Toronto, Ont.

W. D. Gray, '19.

Concerning the Rollamo.

The printers of the 1917 Rollamo Annual have just notified the Board that, due to the fact that many of their engravers and printers have just recently enlisted in the Government forces they will be unable to get the book here on schedule time.

By paying for your copy at the registrar's office, or to Housholder, who is now acting business manager, the year-book will be forwarded to any address you wish, without additional expense. No books will be sent C. O. D. this year.

The 1917 Rollamo Annual will contain: Pictures of all your classmates, the faculty, the seniors, an illustrated school calendar, a historical sketch of the school, an editorial by J. K. Walsh, and will be bound in an artistic cover. In fact, it will be a scrap book of the school year, of which you may be proud.

Commencement Number Out Next Thursday.

The next issue, The Commencement Number, will appear next Thursday, May 24th. This will be the last issue of the Missouri Miner for the present school year. The Miner wishes every subscriber and student a prosperous vacation period.

We also thank you for your hearty co-operation during the year.

THE MINER STAFF.

Tactical Organization of the U. S. Army.

Following is the organization of the various units of our army, and the manner in which they combine to form larger units.

A company of infantry, a troop of cavalry, or a battery of field artillery is the smallest unit which is recognized for administrative purposes. Each is commanded by a captain, who is assisted by two lieutenants, in the case of infantry and cavalry, or by three or sometimes four lieutenants in the case of field artillery. For drill and other purposes, a company, troop or battery may be divided into two or more platoons.

Two or more (usually four) companies, troops, or batteries compose a battalion, under the command of a Major. A battalion of cavalry is called a squadron.

Two or more (usually three) battalions or squadrons compose a regiment, commanded by a Colonel, with the assistance of a Lieutenant-Colonel. A regiment of infantry or cavalry frequently has a machine gun troop attached to it.

Two or more regiments form a brigade, commanded by a Brigadier General.

Two or more brigades form a division, commanded by a Major General. The division is practically a small army ready for complete service. In addition to the two infantry brigades, it may have a brigade of field artillery, a regiment of cavalry, and engineer battalion, and sanitary and supply train troops. Its strength on a war footing is about 15,500 men.

Two or more divisions form an army corps.

Infantry, cavalry and field artillery are termed the three "major branches" of the service, and are the only branches organized in regiments and brigades. Other branches are called "auxiliary forces" and include:

The Engineer Corps, which is organized in battalions of four companies each; the Medical corps, the Ambulance corps, and the Signal corps, which is organized into companies, and which includes the Aviation corps.

All these various branches comprise what is known as the "mobile army," from the fact that it can be moved about for service in any locality. In contrast to this is the Coast Artillery Corps, which is organized in separate companies, and must be stationed at the various fortifications for coast defense.

WANTED.

20 volunteers to raise the flag. Let's not be a bunch of quitters.

HAVE YOU
Ever Tried
Chase & Sanborn
SEAL BRAND
Coffees and Teas
Coffee at 25c, 30c, 35c and 40c
Tea, all high grade, 60c and 70c
BUY IT AT
Model
Grocery
Telephones 78 and 279.

UNITED
Electric Shoe Repairing Co.
Eighth Street,
ROLLA, MISSOURI.
Next Door to Herald Office.
Your Shoes Fixed
While You Wait.
Good Leather Good Work.
Right Prices.
Give Us Your Trade.

LAUNDRY
Leave Your Laundry
At The
City Barber Shop
Charles Bunch, Prop.

FOR THE
BEST TO EAT
and WEAR
TRY
Schumans

Summer Library Hours.

Beginning Thursday, May 24, and until the opening of school in September, the Library will be open on week days from 8 a. m. until 12 m., and from 1 p. m. until 4 p. m., except on Saturday, when it will be open from 8 a. m. until 12 m.

The Library will be closed on the holidays: Wednesday, May 30; Wednesday, July 4; and Labor Day, Monday, September 3.

On commencement day, Friday, May 25, the Library will be open from 8 a. m. until 10 a. m., and from 1 p. m. until 4 p. m.

All books now out are considered due on May 24, and should be returned not later than that date, or else renewed with an explanation that they are needed for use after that date. Books which are not returned or renewed by May 24 will be liable to the usual fine on overdue books.

New Books Added to the Library.

Among the books added to the Library during the past week are the following:

American Institute of Chemical Engineers, Transactions, Vol. 1, (1908) to date; **Lunge**, Technical chemists' handbook; **Blood**, Experiments in descriptive organic chemistry; **Rogers**, Elements of industrial chemistry; **Olsen**, Textbook of quantitative analysis, 5th ed. 1916; **Lunge**, Technical methods of chemical analysis, 6 vols.; **Rosenhain**, Physical metallurgy; **Wynne**, Handbook of engineering mathematics; **Ely**, Outlines of economics; **Nitobe**, The Japanese Nation; **Pickering**, Engineering analysis of a mining share; **Berg**, Electrical engineering, advanced course; **Twyford**, Purchasing; Cambridge History of English Literature, vols. 13-14 (the 19th Century); **Hudson**, The Engineers' manual; **Stillman** Engineering chemistry; **Patterson**, German-English dictionary for chemists.

Pannings of the Week.

Dr. Barley again showed his big-heartedness and sympathy for the student body when he announced Wednesday that he would give no more quizzes. Dr. Barley gets a great deal of work out of the students, yet does it in such a way that the students not only do not mind the work, but really enjoy it. If all the Profs. handled the students as Dr. Barley does, a twelve-months school year would be a pleasure.

Heard at the corner of 8th and Pine: "Give us liberty or give us death." There has been no funeral.

Piles of knowledge and knowledge of piles were needed for the masonry quiz last Monday.

One of the young geologists was quite put out because a Jimtown girl refused to keep a date with him, owing to the fact that she was to be married the next day. He thinks it a mean trick. "Fickle woman, how thy mind doth change!"

The boys are getting a list of the bone-dry states before accepting jobs for the summer.

Most of the social bears have left, so now it is safe picking for those fussingly inclined who are left.

Vacation will soon be upon us, and it is going to be hard for some to work in a mining camp, when they are used to a summer resort, and at least two summer cases.

Only one more week, and then what?

Arise! for the dawn of vacation has come,

The work of school is o'er for some,

And in our ears from mill and mine

Comes the sound of labor and machinery's hum.

Come, let's rejoice in the warmth of spring,

Our cares and worries of flunking fling

Into the winds, for now it is too late;

The bell of school will little longer ring.

Frm T. P. F. Walsh.

Dr. A. L. McRae,

Rolla, Mo.

Dear Doctor:

Was mustered into United States service yesterday. I'm getting along O. K. All Rolla boys feeling fine.

T. P. F. WALSH.

Get your Dance Ticket Today.

FRESHMAN COLUMN.

A real good draftsman could make quite a bit of money from the Freshmen now. So could a good blacksmith or chemist.

Sherman has a new name. "Fat" Laun has dubbed him "Brains." No one seems to know why, tho.

Bailey and Davidson spent the last week end at Jerome with the rest of the poor fish, and had a thrilling encounter with a Frisco brakeman on the return trip.

Horace Catlett Hume has changed his address to Waco, Mo.

N. P. Johnson was seen fussing out at Meramec Springs last Sunday.

Many a Freshman's thoughts are now thoughts of soon seeing the girl he left behind.

Bill Bailey has become a very enthusiastic English student lately. Ask Bill for particulars.

Taggart is going to Annapolis. He sure will make some sailor. He hopes to command a U boat by next spring.

Novak came near smashing Norville in the jaw the other day. Ask him about it.

Tales from Hoffman are quite popular with some Freshmen. Very sweet music indeed.

Excellent music for the Ball.

Dance Tickets on sale at Lockner's Jewelry Store.

MODEL MEAT MARKET

Best Kind and Quality of
FRESH AND SMOKED MEATS
Fresh Fish Every Friday.
Telephone No. 98.

FRESH LINE

LOWNEY'S CANDIES,

CIGARETTES,

CIGARS AND TOBACCO.

Knapp's Drug Store

Go To Johnson's**Pool and Billiards**

will help you to forget the monotony of the last few days in Rolla. The place where you are WELCOMED and Met with a SMILE.

**DON'T FORGET
WE SELL**

Kodak Supplies

And Also do Quality Finishing Work.

Quick Service.

**S MAIL'S
SMOKE
SHOP**

Before You Leave

See Me About Some

Miner Jewelry

J. A. ALLISON,

The Jeweler of Quality.

THE MISSOURI MINER.

A weekly paper published by the Students, in the interest of the Alumni, Students and Faculty of the Missouri School of Mines and Metallurgy, Rolla, Mo.

Entered as second class matter April 2, 1915, at the post office at Rolla, Missouri, under the Act of March 3, 1879.

STAFF.

G. E. Ebmeyer.....	Editor.
J. K. Walsh.....	Associate Editor.
C. W. Hippard.....	Assistant Editor.
F. H. Geib.....	Local Editor.
G. D. Clayton.....	Exchanges.
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M. L. Terry.....	Business Manager
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O. Goldsmith.....	Assistant Circulation

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T. P. F. Walsh.....	Senior Class
T. L. Dawson.....	Junior Class
F. Deckmeyer.....	Sophomore Class
C. B. Hummel.....	Freshman Class

Published Every Friday.

Rates.

Single Copies.....	5 Cents.
Per Month.....	15 Cents.
Per Year.....	\$1.00

Help Wanted.

The Editor joined the navy.
The associate joined the army.
A reporter went to France,
And eight more are in the army,
and nothing happened
—The Survivors.

Geo. Easley, '09, of LaPaz, Bolivia, S. A., and John W. Bodman, '10, of Chicago, have written that they expect to be in Rolla for commencement exercises.

The National Association of State Universities met Friday in Washington, D. C., where it conferred with the Council for National Defense.

G. B. Wilson and A. J. Teas have accepted positions with the Illinois Highway Commission.

E. J. Weimer has accepted a position with the Federal Lead Co., of Flat River, Mo.

Get your Dance Ticket Today.

CLASS OF '18.

Financial Statement St. Patrick's Celebration March 16, 1917.

Receipts.

Donations from business men.....	\$ 80.35
Sale of St. Pat's ribbons at 75c.....	149.50
Sale of school colors at football game.....	14.35
Cash on hand from Sophomore year, per Clark.....	3.17
Pool hall benefit.....	16.45
Haydee Show, Parker Hall, per Burnet.....	99.27
Y. M. C. A. donation, 1/2 gate receipts Lyceum.....	10.25
Class dues paid by the Juniors of Class '18.....	135.30
Class dues outstanding to date, May 10, 1917.....	58.95
St. Pat ribbon money outstanding to date.....	25.00
Total.....	\$592.59

Expenses.

Incidental supplies: Ribbons, decorations, floats.....	\$ 75.40
Costumes.....	27.00
Bunting, crepe, paint, glue, pins, etc.....	80.92
Total St. Pat's printing bill (exclusive of Haydee).....	44.75
Refreshments and cloak room attendant at ball.....	10.00
Express on costumes.....	6.51
Teams.....	25.00
Music, Cicardi's or hestra.....	101.00
Automobile, hire, taxi.....	3.00
Minstrel Show expense, per Stoner.....	9.05
Films for "Kiddie's Show".....	8.04
Lumber.....	7.37
Flowers, Queen's bouquet, ferns.....	8.75
Cigars to Bob Dickerson, Mr. Brody, M. T. Light.....	5.70
Piano rent to John Scott.....	10.00
Surplus, cash.....	86.15
Surplus, bills receivable.....	83.95
Total.....	\$592.59

C. E. BARDSLEY,

Chairman of Finance Committee, Secretary and Treasurer of Class of '18.

M. J. Kelly, '14, at present studying for his Doctor's degree at the University of Chicago, will join the research Staff of the Western Electric Co. September 1, 1917.

Charles L. French, '08, has been appointed a first lieutenant in the Engineer Officers Reserve Corps, and has been sent to Ft. Riley.

The Rolla Herald

Established in 1866.

Charles L. Woods, Publisher.

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If You Want To be
SATISFIED,
Eat at The
DELMONICO

THE MODEL.

The modern girl,
Alas, how sweet.
She wears hip boots
On tiny feet,
—Jackson (Ia.) Sentinel.

A nobby waist
That shows much throat,
The kind that grabs
A fellow's goat.
—Morrison (Ill.) Times.

A "chic" young hat,
On it a plume
The type of skirt
That's cut too soon.
—Hawarden (Ia.) Chronicle.

High boots, short skirts,
Thin waists, some dish!
To meet such girls
My life ambish.
—The Student (U. of N. Dak.)

Our girls are there
With all the "stuff."
Come and compare;
This is no bluff.
—The Athenian.

There are no girls here,
Nor do we care,
Our mind's on work,
And not the fair.
—The Missouri Miner.

Have you purchased your
Commencement Ball Ticket?

MURAD

THE
TURKISH
CIGARETTE

S. ANARGYROS
MURAD

FIFTEEN CENTS

MURAD, The
Turkish Cigarette, is
made for people who
want the best cigarette
irrespective of price.

Thousands of smokers of 25 cent
brands have tried MURADS,
adopted MURADS, and remained
loyal to MURADS—because they
like MURADS better.

Today MURADS are the larg-
est-selling 15 cent Turkish ciga-
rette, not only in America, but in
the world.

YOU WILL ENJOY MURADS
MORE THAN ANY
CIGARETTE YOU
EVER SMOKED.

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Makers of the Highest Grade
Turkish and Egyptian
Cigarettes in the World

*Everywhere
Why?*

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"Skinner's Dress Suit"
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For Insurance.**

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The
Students' Friend
Bring Your Finishing To
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Composition of the New Army.

We are able to give for the first time, says the Army and Navy Journal, May 5, the tentative plan drawn up by the Army War College, and submitted to the General Staff, dealing with the composition of the army to be developed from the first 500,000 men called by the President under the selective draft provisions of the new army bill. The plan provides for the following divisions:

16 Infantry divisions, each 913 officers and 27,243 men.

2 Cavalry divisions, each 607 officers and 16,021 men.

16 Divisional Hospitals, each 24 officers and 222 men.

2 Divisional Hospitals, each 24 officers and 238 men.

64 Camp infirmaries, each — officers and 2 men.

6 Camp infirmaries, each — officers and 2 men.

Medical corps (total) 288 officers and 1,000 men.

Coast artillery corps, (total) 666 officers and 20,000 men.

Army Corps Troops.

16 Brigade field art., (heavy); each 48 officers and 1,319 men.

8 Aero squadrons, each 10 officers and 154 men.

8 Balloon companies, each 19 officers and 154 men.

10 Field hospitals, each 6 officers and 73 men.

10 Ambulance companies, each 5 officers and 150 men.

22 Field bakeries, each 1 officer and 67 men.

6 Telephone battalions, each 10 officers and 215 men.

16 Pack companies, each — officers and 14 men.

6 Ammunition trains, each 4 officers and 852 men.

6 Supply trains, each 2 officers and 426 men.

Grand total, all units, 18,538 officers and 528,659 men.

The officers for this force will be drawn from the Regular Army and the National Guard, the Officers' Reserve Corps and the "Country at large." The War College recommended that 200,000 men be withdrawn from the Army and Guard (when both are recruited to full authorized strength) for appointment as company officers and non-commissioned officers in the new army. The College advised against any estimate which would give less than 150,000 men from this source.

It is the specific purpose of the War Department that each regiment in the new forces shall be commanded by an officer from the regular establishment, and that at least one of his majors

and all of the staff officers (adjutant, ordnance, supply officer, etc.) shall be experienced men from the Regular Army.

(Copied from the Engineering and Mining Journal, May 12, 1917.)

Have you made a date for the Commencement Ball?

SOPHOMORE COLUMN.

Last Sunday Owens, Goolsby and Hodges were entertaining all Meramec Springs visitors with exhibitions of fancy horse-shoe pitching.

The best way to get in a good humor is to go over to the Chemistry Laboratory and scan the qualitative sub list Deckmeyer, Niece, Howendobler and Stokes are proving conclusively the superiority of Sophomores over the Freshmen.

Wednesday night Brazill passed through here on his way to the aviation camp in Texas. We are all for you, Micky.

Our expert groundkeeper, Lynn, is going dressed up all the time now. Perhaps he is aying to make an impression ;or, perhaps, he already made too much of an impression, on the khakis.

All debts whose payment involves the transfer of pies or deserts should be cleared up immediately, so that the officers will be able to straighten up their accounts. Faculty.

Did anybody ever hear of a Sophomore carrying the name of Kenneth Campbell Wilson? There is a name like that in the catalogue.

At the meeting the faculty made it possible for us to leave before we had expected to leave. The best thing we can do now is to attend commencement exercises in a body.

F. O. Blake, M. S. M. '10, superintendent and chemist for Watts & Ammerman, at Manhattan, Kansas, spent Wednesday evening of last week in Rolla with old friends. He was the guest at the Sigma Nu fraternity, of which he is a member.

Too Bad!

Owing to the fact that so many men have left school for Ft. Riley, it has been necessary to call off the Inter-Club-Frat baseball series. At this time only three clubs are running, and many men from the others which have discontinued for the year, are now eating at the remaining three.

The season, as far as it went, was excellent, and the games were all of good calibre. About three-fourths of the entire season was played off, and to pick the three teams for the finals had already loomed up as a big problem itself, and undoubtedly the three final games would have been of first-class type.

The cup which is given by J. A. Allison was won last year by the Sigma Nu's, at which place it now is. In disposing of the trophy for this year, it is a question whether it should remain at its present home, or be taken back to the donor. This matter will be left to Mr. Allison, and whatever his decision may be, it will meet with the approval of the student body.

Personal Column.

Missouri Miner,
Rolla, Mo.

Gentlemen:

Our Mr. McNutt left May 14th for Lexington, Kentucky, by way of St. Joseph and St. Louis, at which points he will confer with clients relative to the future petroleum possibilities of Kentucky.

We are opening a branch office in Lexington under the present firm name, with our Mr. McNutt and two field assistants in charge.

Thanking you for the favor, we are,

Very truly yours,
Valerius, McNutt & Hughes.

John H. Bowles, '08, is going to join the 2nd Regiment of Engineers for service in France.

GOOD SHOWING IS MADE BY RAY CON.

Arizona Copper Company Secures Splendid Results With the Use of More More Than 1 Per Cent of Oil to the Ton.

Butte Miner.

That a greater recovery was made by the use of more than 1 per cent of oil than with one-half that amount in the plant of the Ray Consolidated Copper Company at Hayden, Ariz., was shown by the figures produced by E. W. Englemann, flotation engineer of that plant, who was on the witness stand yesterday in the suit of the Minerals Separation against the Butte & Superior Mining Company.

In his direct examination by Attorney Walter A. Scott, Englemann introduced a number of tables compiled from records of the work done under his supervision at the plant. From those tables the following figures were secured:

(The feed was composed of vanner concentrate products averaging about 6 per cent copper.)

In 1915 63,537 tons were treated, using 4.41 pounds of oil to the ton, and resulting in an extraction of 93.44 per cent.

In 1916 92,965 tons were treated, using 3.36 pounds of oil to the ton, and resulting in an extraction of 94.69 per cent.

In the first three months of 1917 28,913 tons were treated, using 20.1 pounds of oil to the ton, and resulting in an extraction of 95.42 per cent.

With respect to the loss in the tailings his figures showed:

In nine months of 1915 291,916 tons were treated, using 1.71 pounds of oil to the ton, and the tailings showed .572 per cent of copper.

In 1916 1,627,172 tons were treated, using .85 pounds of oil to the ton, and the tailings showed .419 per cent of copper.

In February of 1917 (when oil was available), 7,597 tons were treated, using 20.14 pounds of oil

to the ton, the tailings showing .375 per cent of copper.

For three days in March of this year the plant worked on the retreatment of concentrates, using 90 per cent fuel and 10 per cent Barrett's oil. When 22.24 pounds of the mixture to the ton were used the recovery was 96.14 per cent. When 11.27 pounds of mixture to the ton were used for three consecutive days soon after the preceding experiment, the recovery was 96.67 per cent.

Treating slime vanner tailings with straight coal tar, using 22.41 pounds to the ton, the tailings showed .375 per cent copper. Using 11.20 pounds to the ton, the tailings showed .366 per cent copper.

Eliminating fuel oil and using straight Barrett No. 4, with 2.39 pounds to the ton of concentrates, the recovery was 85.95 per cent. Using 1.31 pounds to the ton the recovery was 82.89.

Treating slime vanner tailings eliminating fuel oil, with 2.07 pounds to the ton, the tailings assayed .456, and using 1.13 pounds to the ton, the tailings assayed .543.

In commenting on the results mentioned last the witness stated that "when using straight Barrett No. 4 the bubble was brittle and somewhat delicate, and has a tendency to burst when coming to the surface, thus causing the coarse mineral particles to drop. This oil is a very good frothing agent, and also acts somewhat as a carrying oil, but the latter characteristic is not sufficient to strengthen the bubble enough to carry the larger mineral particles, especially when acting in feeds carrying large percentages of mineral."

A searching cross-examination by Attorney Williams brought out that the foregoing results had been made on slime feed with different types of machines and using from .85 to 21 pounds of oil to the ton, operating on large tonnages. The types of machines used are mechanic-

al, mechanical air and straight air. Some results were maintained on small tonnage on K. & K. machines.

The headings to the slime feed will average about .75 per cent copper and the tailings will carry approximately .25 per cent copper in oxide form.

Prof. W. D. Bancroft was the first witness on the stand yesterday morning, and he was cross-examined by Attorney Williams. In this examination he stated that "absorption is surface condensation or concentration. Cohesion is the holding together of two surfaces of a like substance. There is no surface which does not have a certain amount of adsorption."

After the examination of E. W. Englemann had been concluded, B. H. Dosenbach, metallurgist and assistant superintendent of the Butte & Superior plant, took the stand, and he explained the Everson patent and demonstrated it by an experiment.

In this experiment he took 300 grams of Utah Copper Company's ore, 51 grams of petroleum distillate, 1,350 cubic centimeters of hot water, into which was placed sulphuric acid. The result was a froth about 1 1/4 inches thick.

He then demonstrated the use of what is called a cataract machine, invented in Germany in 1880, using about the same solution as in the preceding demonstration, and the result was a plainly visible froth. This was meant to show that froth had been made by this machine before the time of the patent in litigation, and is to connect the present process with the prior art. Attorney Williams objected to the demonstration as being "wholly irrelevant," but his objection was overruled, and the demonstration permitted to be made.

He then demonstrated the Kirby patent, using the machine which had been utilized in the experiments of Friday. This

was objected to by Attorney Williams, for the reason that the experiment was not made with a machine similar to the one specified in the Kirby patent, but this objection was overruled, and the experiment performed. In this experiment 25 per cent of oil was used, and a heavy froth was made.

These experiments are to connect the present method of operation with the prior art, and their final admission as evidence will depend on the further showing made by the defendant.

The lantern slides illustrating the froths raised in the experiments performed in the Chicago chemists' laboratory will be shown in the court room at 8:00 o'clock Monday night.

EDWARD T. HAASE, FISH COMPANY HEAD, DIES AFTER MONTH'S ILLNESS.

Native St. Louisan Passed All His Business Life With One Concern.

Edward Theodore Haase, president of the A. C. L. Haase & Sons Fish Company, died at 10 o'clock last night at his home, 3523 Longfellow boulevard, after a month's illness. He is survived by three children, a daughter, Margaret, and two sons, Walter and Theodore.

September 9, 1863, and was educated in the St. Louis public schools. He began his business career in 1880 as an employe in the packing room of the Haase fish concern.

Six years later he began traveling for the concern and covered the western and central western territory. In 1894 he became secretary of the fish company after it was incorporated as the A. C. L. Haase & Sons Fish Company. He also was vice-president of the American Diagraph Company and a director in several other concerns. He was a member of the Missouri Athletic Club and the Liederkrantz Club.

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WAR OF ALL KINDS.

Some fellows say they're going to war, others say they'll marry,

But either path they want to choose, let's hope they do not tarry,

No matter where they choose to fight, or what they all fight for,

It's either domestic trouble or good old national war.

Some guys will join the navy and travel the bounding wave,

Others will stick to terra firma, their country's flag to save,

But the fellows standing 'round the ring, watching the others scrap,

Should be cracked upon the bean or walloped across the map.

—Case Tech.

DR. CHARLES FULTON COMMENCEMENT ORATOR.

The School of Mines Commencement exercises will be held Friday, May 25th, 1917. The annual commencement ball will be held in Jackson Gymnasium Thursday evening, May 24th.

At the Friday morning exercises Dr. Charles Fulton, of the Case School of Applied Sciences, of Cleveland, Ohio, will address the graduating class.

Have you purchased your Commencement Ball Ticket?

E. G. Harris Engineer for Rolla Road District.

Rolla Special Road District Commission, composed of J. A. Spilman, W. J. Mitchell and A. A. Smith, has elected Prof. E. G. Harris engineer for this district. Prof. Harris is now designing a concrete and iron bridge, to be built over the stream that crosses the road running east between the farms of H. S. Harris and A. A. Smith.

J. C. Barton, who has completed his course at the School of Mines for his degree in Mining Engineering, left last week for Mascot, Tenn., to accept a position with the American Zinc Co. He was accompanied to Mascot by Mrs. Barton and her mother, Mrs. Sabourin. They made the trip from Rolla to Mascot in their automobile.